

$^{16}\text{O}(^{13}\text{C}, ^{12}\text{C})$

- 1975Se03: $^{16}\text{O}(^{13}\text{C}, ^{12}\text{C})$, E=3-16 MeV; measured $\sigma(E)$. ^{17}O levels deduced S_1S_2 .
 1976We21: E=36 MeV; measured $\sigma(\theta)$. ^{17}O levels deduced S. See also (1976WeZE).
 1977Du04: $^{16}\text{O}(^{13}\text{C}, ^{12}\text{C})$, E<Coulomb barrier; measured σ . ^{17}O deduced effective charges, radial integrals.
 1979Bo36: $^{16}\text{O}(^{13}\text{C}, ^{12}\text{C})$, E=24 MeV; measured $\sigma(\theta)$. ^{17}O levels deduced L, S. Enriched targets. Coupled-channel analysis.
 1979Ra10: $^{16}\text{O}(^{13}\text{C}, ^{12}\text{C})$, E=105 MeV; measured $\sigma(\theta)$. ^{17}O levels deduced S, parity.
 1980Si12: $^{13}\text{C}(^{16}\text{O}, ^{17}\text{O})$, E=30-60 MeV; calculated $\sigma(\theta)$. Coupled channel treatment, channel nonorthogonality.
 1983Os08: $^{16}\text{O}(^{13}\text{C}, ^{12}\text{C})$, E=36 MeV; analyzed $\sigma(\theta)$; deduced model parameters. ^{17}O levels deduced spectroscopic factors.
 1985Be37: $^{13}\text{C}(^{16}\text{O}, \text{X})$, E=20-70 MeV; measured γ -ray yields of reaction products; deduced resonant behavior, Landau-Zener effect. Hauser-Feshbach analysis.
 1986Pa10: $^{13}\text{C}(^{16}\text{O}, ^{12}\text{C})$, E(cm)=7.8-14.6 MeV; measured E_γ , I_γ , residual production $\sigma(E)$; deduced fusion $\sigma(E)$. Statistical model analysis. Ge(Li) detector, enriched target.
 2000Ik01: $^{16}\text{O}(^{13}\text{C}, ^{12}\text{C})$, E=50 MeV; measured particle spectra, $\sigma(\theta)$.

 ^{17}O Levels

E(level) [†]	J^π [†]	L [‡]	S_1S_2 [#]	Comments
0	$5/2^+$	3	0.60	S_1S_2 : $1\text{p}_{1/2} \rightarrow 1\text{d}_{5/2}$ neutron transfer configuration (1979Bo36: LOLA). See also (1979Bo36: $S_1S_2=0.49$ (NR(CRC)). See also (2000Ik01: S=0.900 (DWBA), 0.900 (CC)).
871	$1/2^+$	1	0.72	E(level): Well described as the coupling of a $2s_{1/2}$ neutron to the ^{16}O core (1968Na06). L: See also (1976We21, 1983Os08). S_1S_2 : $1\text{p}_{1/2} \rightarrow 2s_{1/2}$ neutron transfer configuration; extracted using a Coulomb wave Born approximation (1975Se03); and compared with the theoretical value 0.61 (1968Na06: using $S_1=0.61$ for the $^{13}\text{C}_{g.s.}$). See also (1979Bo36: $S_1S_2=0.50$ (LOLA), 0.51 (NR(CRC)). See also (1983Os08: S=0.6138), (2000Ik01: S=0.800 (DWBA), 0.750 (CC)). $C^2S=0.49$; Q-value=-0.804 MeV (1976We21).

[†] From Adopted Levels. Also observed in (1979Ra10, 2000Ik01). See also (2000Ik01) for higher excited states observed.

[‡] L transfer from (1979Bo36).

[#] Products of the neutron spectroscopic factors in the initial and final states.

 $\gamma(^{17}\text{O})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
870.8	871	$1/2^+$	0	$5/2^+$	E_γ : From (1985Be37). See also (1977Du04, 1976We21).

$^{16}\text{O}(\text{¹³C}, \text{¹²C})$ Level Scheme